

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor: STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM

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EDITORIAL COMMENT.



The World Flights

BY the time this week's issue of FLIGHT reaches our readers the American world-fliers will, except for unforeseen circumstances, have reached this country, and thus the fourth flight from America to Great Britain will have been successfully completed. The first complete crossing of the Atlantic, from west to east, was accomplished in the spring of 1919 by the American flying boats N.C.4 and N.C.3, commanded by Commander Reed and Commander Towers respectively. Leaving Newfoundland on May 16, in company with the N.C.1, piloted by Commander Bellinger, the N.C.4 reached the Azores on the following day, while the N.C.1 had to come down, the crew being picked up by the British steamer *Iona*. The N.C.3 also was forced down, but Commander Towers managed to taxi the machine over something like 200 miles of sea, and reached Ponta Delgada in the Azores on May 19. Bad weather detained the Americans at Ponta Delgada until May 27, when the N.C.4 successfully made the flight from there to Lisbon, thus completing the Atlantic crossing. On May 31 the N.C.4 arrived at Plymouth, thus for the first time linking America and Great Britain by air.

In the meantime an unsuccessful attempt had been made by Mr. Harry Hawker and Commander Grieve, who left Newfoundland on their Sopwith biplane, Rolls-Royce engine, on May 18, but had to come down after covering a distance of approximately 1,100 miles, and were picked up by the Danish tramp steamer *Mary*. It will still be recalled how great was the anxiety felt for the safety of Hawker and Grieve when no news was received for many days, the *Mary* not being equipped with wireless.

Then, on June 15, 1919, came the entirely successful flight from St. John's, Newfoundland, by John Alcock and Arthur Whitten Brown, who, flying a Vickers "Vimy," with two Rolls-Royce engines, left Newfoundland on June 14 and arrived at Clifden,

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1924

July 24—

Aug. 10 Tour de France for Light 'Planes

Aug. 4 Aerial Derby at Lympne

„ 4 Holiday Light Aeroplane Handicap at Lympne

„ 12 King's Cup Race

Sept. 29—

Oct. 4 Light 'Plane Competitions at Lympne

Oct. 2 Aero Golfing Society. Autumn Meeting, at Moor Park Golf Club, for A.G.S. Challenge Cup presented by Cellon (Richmond) Ltd.

„ 4 Grosvenor Challenge Cup Race at Lympne.

October Schneider Cup Race, Baltimore

Dec. 5-21 Paris Aero Show.

Ireland, the next day, having covered the distance in a single flight of 16 hours 12 minutes. This was, of course, the first direct non-stop flight across the Atlantic.

The third crossing of the Atlantic, from west to east, was made by the British airship R.34, which made the double crossing in 1919. The flight from Great Britain to America was made early in July, the R.34 leaving East Fortune on July 2 and arriving at Mineola, Long Island, on July 6. The return journey, the third to be made in this direction, was commenced on July 10, and the R.34 arrived at Pulham on July 13.

Now the three Douglas world-cruisers have reached London, in the opposite direction and *via* a much longer route. Originally four machines left Santa Monica, California, on March 17, but one of them, piloted by Major Martin, the leader of the American expedition, crashed in Alaska and had to be left behind, Lieut. Smith taking over the command of the expedition.

After many and tremendous difficulties the remaining three machines, piloted by Lieuts. Smith, Nelson and Wade respectively, managed to cross from Alaska to Japan, continuing their journey down the China coast to India, on to Baghdad, and finally *via* Constantinople, Vienna and Paris to London. The total distance covered up till now is approximately 18,000 miles, or about ten times as far as the direct trans-Atlantic crossing. The single distances that have had to be covered in one flight have, of course, been very much shorter than Alcock's and Brown's famous flight, but, on the other hand, the difficulties in other respects, such as climate, etc., have been very much greater. The flight of the American aviators up till now has been a splendid example of dogged determination, and it is just and proper that Great Britain should welcome them at an official banquet. This, we understand, it is the intention of the Royal Aero Club to do, but at the moment of going to press it has not been possible to decide definitely, as much will depend upon the plans of the Americans, who, after the usual formalities at Croydon, will probably continue to the Blackburn seaplane base at Brough, near Hull, where the

machines are to be fitted with floats for the final stages of their journey.

The plan is to fly from Brough to Canada *via* Faroe Islands, Iceland and Greenland, and it is expected that this stage will prove quite as difficult as the section from Alaska to Japan, most of the route never having been flown over before. We are sure all our readers will join us in bidding the gallant American aviators welcome to Great Britain, and in wishing them every success on the remaining stages of their hazardous flight.

The British crew, who left Calshot on a Vicker's "Vulture," with Napier "Lion" engine, on March 25, have arrived at the Kurile Islands, having covered a distance of approximately 11,600 miles. Persistent ill-luck has dogged Squadron-Leader MacLaren and his companions, Flying Officer Plenderleith and Flight-Sergeant Andrews. First engine trouble delayed them at Corfu, then more trouble occurred at frequent intervals, until finally their machine was crashed at Akyab. By the very sporting spirit of the U.S. Navy a fresh machine was dispatched from Tokio, on which the flight was continued, and during the flights from Rangoon to the point reached at present by the Vickers "Vulture" there is evidence that the annoying difficulties which were met with during the first stages have at last been overcome. It is sincerely to be hoped that this change in luck will hold so that the very sporting attempt of Major MacLaren and his companions may have an opportunity of demonstrating British aircraft and aero engines to better advantage than has hitherto been the case. That the dogged determination of the British crew can now succeed in making up the leeway of the earlier stages is almost impossible, but in any case the flights are not to be regarded as being in the nature of a race, although popular opinion was inclined so to consider them. The Americans are now at an advantage in having covered one of the two very difficult stages, while the British crew still have both ahead of them, *i.e.*, the flight from Japan to Alaska and the trans-Atlantic flight. We wish them the best of luck, and shall follow their progress with the very greatest interest during the next few weeks.



THE LATEST FOKKER COMMERCIAL : The Fokker F. VII, fitted with Rolls-Royce "Eagle IX," is a development of the famous F. III, but has accommodation for two pilots and eight passengers. The machine has a communication door between the pilot's cockpit and the cabin, and is provided with wireless telephony installation. On its first test flights this machine carried a load equivalent to 16 passengers. The undercarriage is of unusual design, giving a very wide wheel track. The tension of the springing is provided with special adjustment for varying loads.

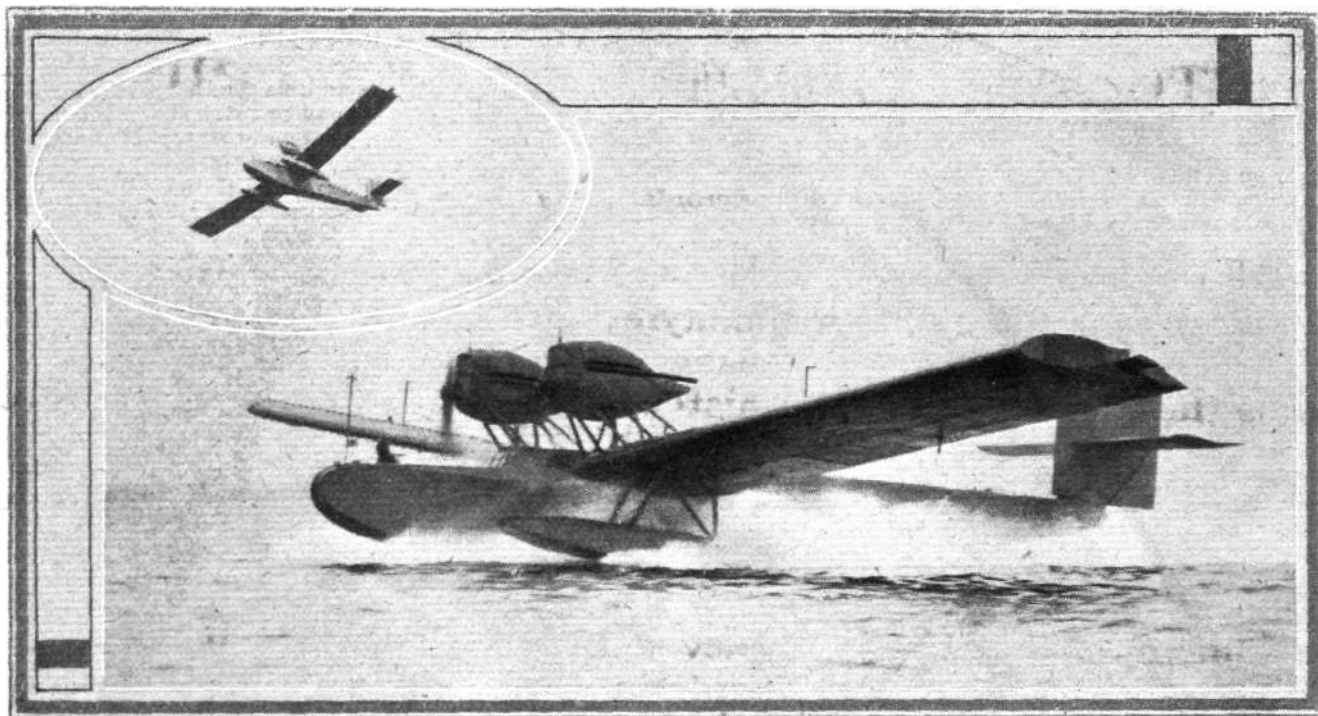
ALL-METAL FLYING BOATS FOR BRITAIN

Wm. Beardmore and Co., Ltd., Secure Rohrbach Rights

It has now become possible to state officially that the famous firm of Wm. Beardmore and Co., Ltd., has secured the British building rights for the machines designed by Dr. Rohrbach, and will exploit the patents held by the famous German designer. Dr. Rohrbach, it will be remembered, was chief engineer and designer to the Zeppelin-Staaken works during the War, and among the machines of his design mention may be made of the very unorthodox four-engined Zeppelin-

Staaken Company and emigrated to Denmark, where he founded the Rohrbach Metal Aeroplan Co. A/S. in Copenhagen. This firm has constructed a twin-engined, all-metal flying boat, type Ro. II, which was illustrated in our issue of May 1, 1924. The machine illustrated was the original experimental type, but we understand that it has since been put into production.

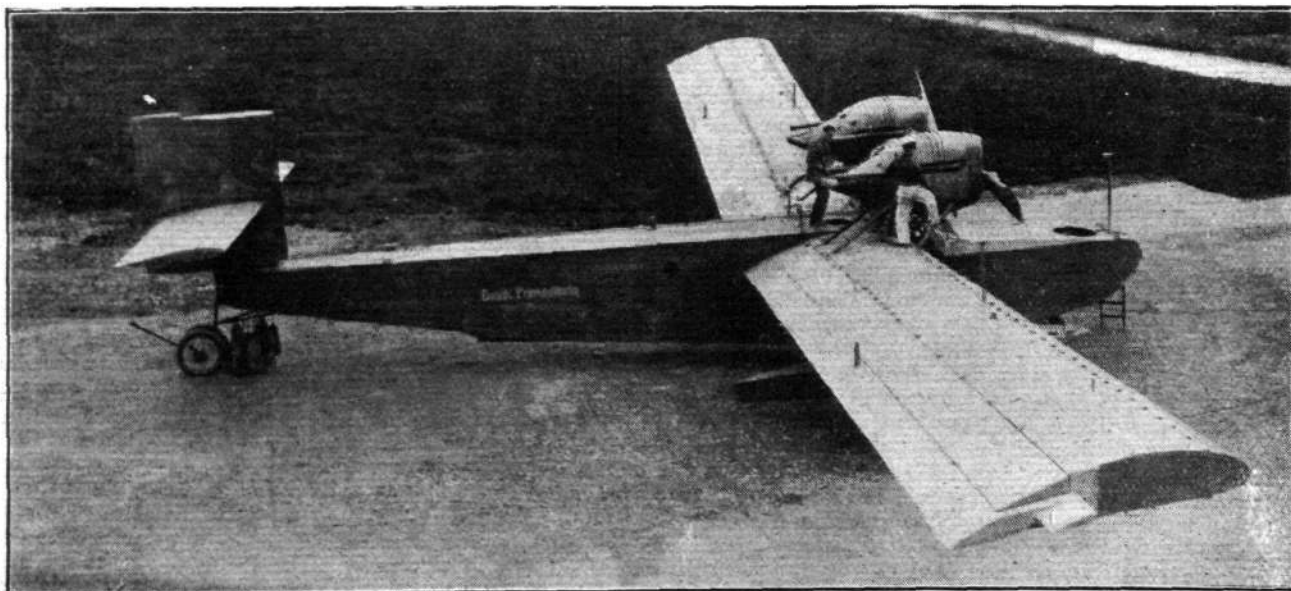
The Ro. II will now be constructed at the Beardmore works



The Rohrbach Ro. II taxiing: Inset a view of the machine in flight.

Staaken monoplane, built entirely of duralumin, which was finished shortly after the War, but which was destroyed by the order of the Inter-Allied Commission after having made a few successful test flights. As it became evident that no German designer who wished to progress would have any opportunity to do so while the present restrictions on size and power of even commercial machines were in force, Dr. Rohrbach severed his connection with the Zeppelin-

at Dalmuir, as will also other types of Dr. Rohrbach's design, but about these we are not permitted to give further information at the moment. As the type Ro. II will probably be the first machine to be built at Dalmuir we have thought that an illustrated description might be of considerable interest to our readers. At present it has not been deemed desirable to go into very great detail as regards the constructional features, but it is hoped that at a later date, when the



Side view, from above, of the Rohrbach Ro. II. The men standing by the engines give a good idea of the size of the machine.

first machine is completed, it may be possible to give a more detailed description, showing by sketches and other illustrations the many ingenious details that are to be found in the Ro. II and in other designs of Dr. Rohrbach's. When that will be we naturally cannot definitely say, but as Beardmore's have had extensive experience of all-metal construction, and one of the complete machines has arrived in Scotland, where it will serve as a pattern, it may confidently be expected that it will not be very long before the first British-built Ro. II will leave the stocks.

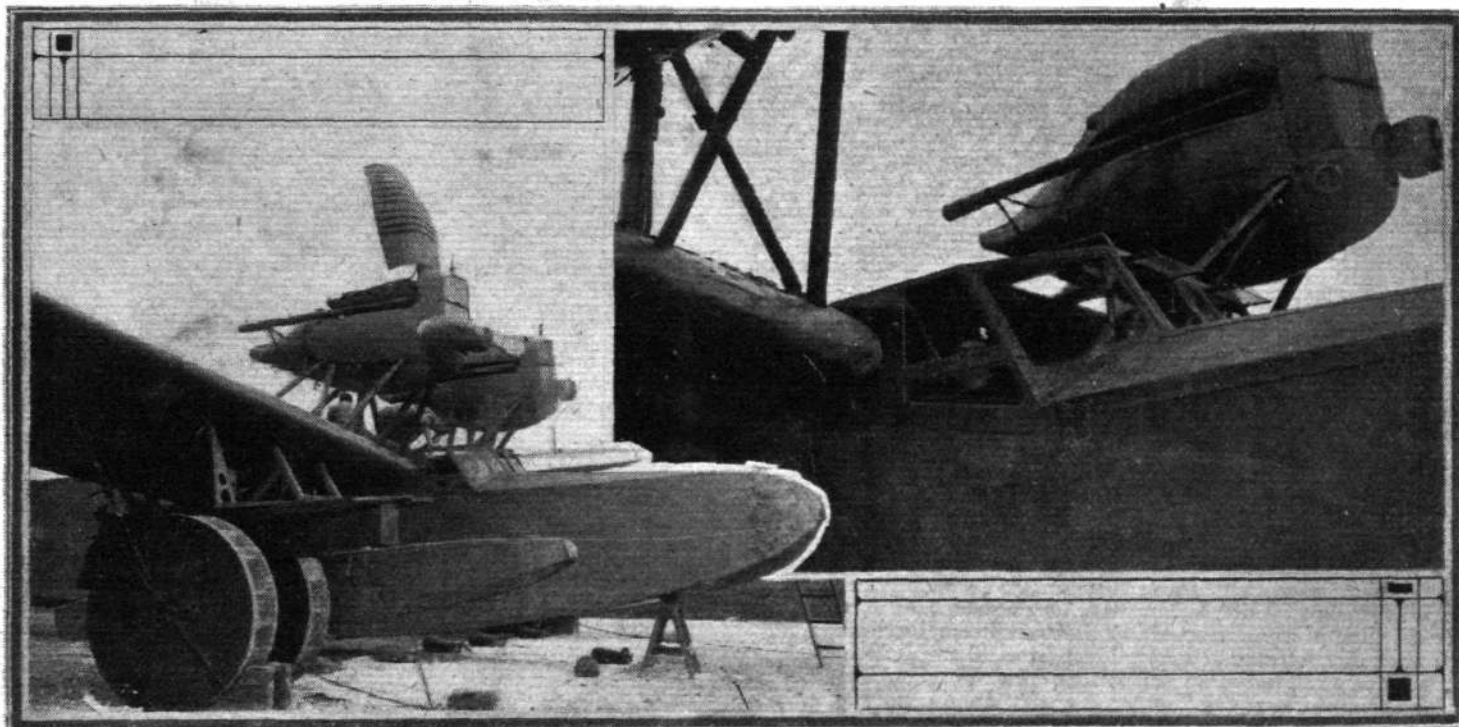
As the accompanying photographs will show, the Ro. II is a twin-engined flying boat of the cantilever-monoplane type. The design is very unorthodox, not only in its constructional features, but also in general lay-out. As already stated, the machine is built entirely of duralumin, even to the covering of boat hull and wings, and the only other material employed, outside the engines, is steel in the form of a few fittings and struts. At present wood propellers are fitted, but it seems probable that in time these will be replaced by metal airscrews, thus making the machine entirely metallic and to a very great extent impervious to weather conditions.

The monoplane wing is set at a large dihedral angle, and the two Rolls-Royce "Eagle" engines are placed above the wing, one on each side and projecting some distance ahead of the leading edge. It might have been thought that the very high centre of thrust would tend to make the machine some-

a physical impossibility for the machine to catch fire, what with the engines being totally exposed to the air, well clear of any other part of the structure, and the tanks several feet below them. It should also be an easy matter to provide jettison valves so that in case of accident the tanks could be emptied in a few seconds.

The cabin accommodation has not, in the present machine, been designed for commercial use, and so is not comparable with that of commercial seaplanes. The top of the boat shows a sudden drop ahead of the wings, and at this point windows are provided, some of which face forward, while others look diagonally forward. Smaller windows in the side enable the pilot to look along the leading edge of the wing and diagonally downward and forward. In addition, there is a skylight in the roof. In the extreme nose of the boat is a cockpit that may be variously used during the process of mooring the machine, by a gunner or for photographic work. A manhole in the deck of the boat gives access to the space between the engines, and enables the engineer if necessary to crawl out to one of the engines in order to effect minor adjustments. From this manhole also the windmills driving the petrol pumps can be reached.

The monoplane wing, as already stated, is of the cantilever type, and is set at a very pronounced dihedral angle. The section used is, we believe, one of the Göttingen sections, although not of the Schoukowsky or "tadpole" type. It



THE ROHRBACH Ro. II: On the left a view showing the two engines, the nose of the boat, and one of the wing floats. The large wheels are used for transport on land only. On the right a close-up view of the windows, etc., of the pilot's cockpit.

what tricky to fly, but Dr. Rohrbach informs us that the machine shows no tendency to drop its tail when the engines are throttled down. Probably a careful balance has been struck between high thrust with slipstream on tail and no thrust with no slipstream. It will be observed that the tail plane is placed fairly high, and this, coupled with the fact that the boat hull is long and the tail well away from the wings and engines, is responsible for the good trim obtained. The lateral stability is also stated to be good, and the machine is regarded by pilots who have flown it as being very nice to handle, the control surfaces being balanced and very light on the stick. The boat hull is of the flat-sided type, and is also flat bottomed. There are two steps, one approximately under the centre of gravity and a rear step half-way between the wings and the tail. Aft of the step the bottom is slightly vee-shaped. The deck, like the sides and bottom, is quite flat. Lateral stability on the water is obtained by two wing floats placed a considerable distance out, and it will be observed that the wings, with their large dihedral, are well clear of the water.

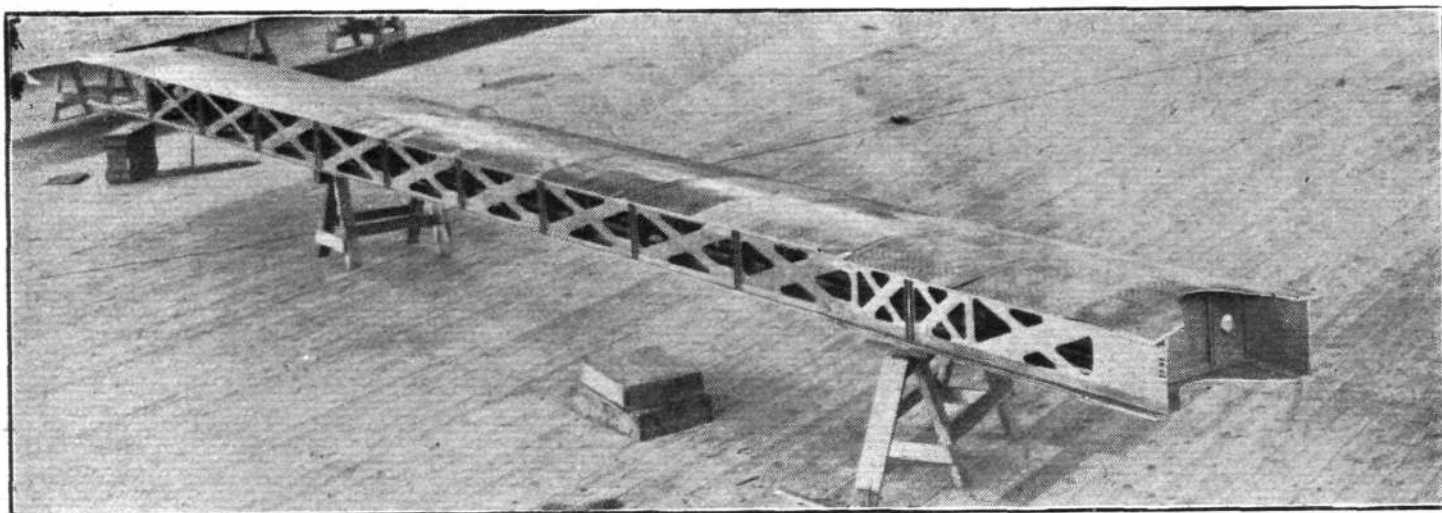
The fuel is carried in two large tanks slung underneath the wings, one on each side, between the wing floats and the main hull. There is thus no petrol on the boat itself, and the whole space is available for passengers or cargo. Petrol pumps driven by windmills lift the fuel from the tanks to the engines. The arrangement is such that it would appear almost to be

has a flat-bottom surface, with the leading edge slightly elevated, and a deeply-cambered top surface, giving ample room for spars. It is to be observed that the wing does not taper either in chord or thickness, and that the ends are "sawn off square." It appears somewhat doubtful what the effect of this is on the efficiency, especially with such a thick section. Generally speaking, it is found that tapering a wing reduces the lift somewhat, reduces the drag at a rather more rapid rate, with the result that the L/D is usually better for the tapered than for the uniform wing. On the other hand, there are cases on record in which a taper in chord has resulted in an increase in both the lift and the L/D. The ailerons balances are somewhat unusual, and consist of short symmetrical-section aerofoils carried on an arm forward of the hinge and projecting past the wing tips. In other words, they are horn balances in which the horn does not form a portion of the main aileron. We believe a similar principle has been successfully applied to the balancing of ship's rudders.

Constructionally, the wing of the Rohrbach Ro. II is interesting on account of the wholly unorthodox principle upon which the wing is built up. The main structure is formed by a "box," the front and back of which is a lattice girder in sheet duralumin, while the top and bottom of the box are formed by the sheet duralumin covering. U-section stringers running parallel with the spars are incorporated in the structure, and prevent the top and bottom covering from

buckling. Of ribs in the ordinary sense there are none, longitudinal bulkheads at fairly long intervals maintaining the section of the box and supporting the stringers. All are, of course, riveted to the outer skin. The leading and trailing edges are separate structures attached at top and bottom to the main structure by small lugs and bolts. It is thus possible

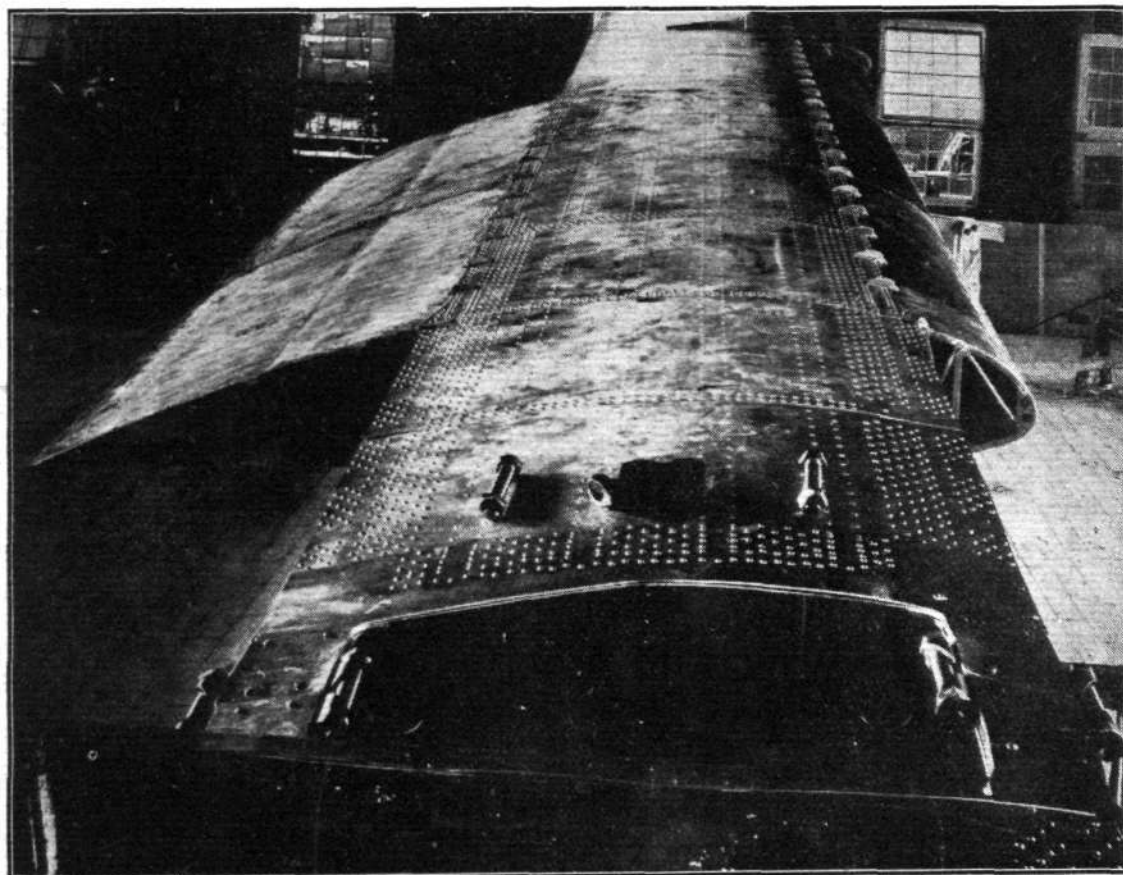
helping to make watertight joints. In this connection, it is of interest to note that the original machine was first flown in November of last year, and that since then something like 120 starts (from rest up to take-off speed) and about 70 flights have been made, and that the boat hull is still perfectly watertight. One small leak was discovered to be due to a faulty



THE CENTRAL SECTION OF A ROHRBACH WING : This wing, built entirely of duralumin, is in three sections, the leading and trailing edges being separate structures bolted to the main, load-carrying, structure.

to undo the top fastenings of leading and trailing edges, which then swing down and allow the whole of the main structure to be examined. Leading and trailing edges take no great part in resisting stresses, and are rather to be regarded as fairings front and back to give the middle portion its proper aerofoil section. By undoing about 20 small bolts the whole leading or trailing edge of one wing can be examined. The

rivet, and as soon as this defect had been remedied the hull became perfectly watertight. The machine has been moored out for long periods, and has withstood the weather without trace of deterioration. The fact that the metal hull does not soak up water is, of course, a great advantage as compared with wooden hulls, which on occasion soak up very considerable quantities when moored out for long periods.



View along the wing of the Rohrbach Ro. II. Note the number of rivets used in attaching the duralumin wing covering.

ailerons, with this form of construction, are not hinged to the main box, but to an auxiliary spar placed farther aft.

The boat hull is built on a somewhat different principle, but consists also of bulkheads and stringers with duralumin sheet covering. Where lap joints in the plates occur strips of fabric specially treated are interposed before riveting, thus

It is, unfortunately, not permissible to publish complete performance figures of the Rohrbach Ro. II, but it may be stated that the maximum speed is 120 m.p.h., which, in view of the fact that the total loaded weight is 14,000 lb., is extremely good. The landing speed is 65-68 m.p.h. In perfectly still air the machine gets off the water in 27 seconds.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

THE KING'S CUP RACE

THE King's Cup Air Race will be held on Tuesday, August 12, 1924.

Starting Places—Aeroplanes, Martlesham Heath. Seaplanes, Felixtowe.

All competitors will be started at 5.30 a.m.

Finish at Lee-on-Solent.—The Finishing Line will be the Pier at Lee-on-Solent. Members wishing to be present at the start or finish are requested to apply to the Club for passes, not later than Saturday, August 9.

THE KING'S CUP AIR RACE

(Under the Competition Rules of the Royal Aero Club)
Tuesday, August 12, 1924.

Prizes.

1st Prize.—The King's Cup presented by His Majesty The King and £100 presented by Samuel Samuel, Esq., M.P.
2nd Prize.—£100 presented by Sir Charles Wakefield, Bart.

SUPPLEMENTARY REGULATIONS.—II.

Date.—The Race will be held on Tuesday, August 12, 1924.

Entries.—Entries will be received up to 12 noon on Tuesday, July 29, 1924.

Verification of Aircraft.—Aeroplanes must be at Martlesham Heath and Seaplanes at Felixtowe, completely erected not later than 6.0 p.m. on Monday, August 11, 1924, for verification by the officials, after which no alterations to the aircraft are permitted. Any competitor not having his aircraft ready for presentation to the officials by the specified time will render himself liable to exclusion from the race.

Turning Points.—Leith (Harbour Pier), Dumbarton (The Castle), Falmouth (Pendennis Castle on Pendennis Point).

The Turning Points on the Course have been selected so that aeroplanes flying over land and seaplanes flying over water will cover approximately the same distance. Maps showing the actual position of each Turning Point will be issued to competitors.

Finish at Lee-on-Solent.—Competitors on arriving at Lee-on-Solent must cross the finishing line (i.e., the Pier) in flight at a height of not more than 500 ft. This may be done in either direction.

Seaplanes will then alight on the water and proceed to the R.A.F. Slipway for verification by the officials.

Aeroplanes will proceed to Gosport Aerodrome (three miles east of Lee-on-Solent), for verification by the officials.

Emergency Landing Places.—A list of emergency landing places in the neighbourhood of the course will be issued to competitors.

Starting (Aeroplanes).—Competitors must be on the starting line 15 minutes before the official time for starting.

The Official Starter will select his position so that he can be seen by the competitors.

Ten seconds before the time of starting the Official Starter will raise a red flag. On the raising of the red flag the pilots and crew, if any, must be on board the aeroplane, and all mechanics, with the exception of one at each wing tip, must stand clear, and chocks, if any, must be removed. At the expiration of ten seconds, the Official Starter will lower the red flag smartly. This is the signal to start.

Honours

At the Investiture held by His Majesty the King at Buckingham Palace on July 9 the following were severally introduced into the presence of the Sovereign, when the King invested them with the insignia of the respective Divisions of the Orders into which they have been admitted:—

Order of the Bath (Military Division)

Received the honour of Knighthood: Knight-Commander Air Vice-Marshal Philip Game.

Companion: Group Captain Lyster Blandy, R.A.F.

Order of the British Empire (Military Division)

Commander: Wing-Commander William Mitchell, R.A.F.

Distinguished Service Order

Flight-Lieut. Philip Fullard, R.A.F. (also received the Military Cross and Bar and the Air Force Cross).

Any competitor crossing the starting line before the lowering of the red flag will be disqualified.

Competitors are solely responsible for the observance of these regulations by those in attendance on the aircraft.

Starting (Seaplanes).—The starting line will be indicated to the competitors at least half an hour before the starting time.

30 seconds before the starting time, warning signals will be given as follows:—

The starter on the official boat will raise a red flag, and simultaneously a smoke burst will be fired.

The starting signal will be the lowering of the red flag, and simultaneously a smoke burst.

Seaplanes must be on the water behind the starting line when the starting signal is given.

Any competitor crossing the starting line before the lowering of the red flag will be disqualified.

Competitors are solely responsible for the observance of these regulations by those in attendance on the aircraft.

Pilots and Passengers.—Change of pilot or pilots is not permitted during the race. Passengers (if any) may be changed at any time, or the equivalent weight, viz., 170 lb., per passenger, substituted.

Postponement.—The stewards may postpone the start to a later hour on the day fixed for the race or from day to day, as they think fit.

ROUND THE WORLD FLIGHT

THE American airmen are expected to reach England during this week, and will only remain in this country a few days. The Royal Aero Club will entertain them to a banquet, but it is impossible to give a definite date until they actually arrive. The date when fixed will be announced in the Press, and members wishing to attend are requested to apply direct to the Royal Aero Club.

TWO-SEATER LIGHT AEROPLANE COMPETITION

It has been found necessary to make an alteration in the date, and the competition will now be held at Lympne Aerodrome near Hythe from September 29 to October 4. The eliminating tests will be held on September 27 and 28.

The Club Headquarters will be the Imperial Hotel, Hythe. Terms (exclusive of luncheon), 17s. 6d. per day. Members are requested to make early application direct to the hotel for rooms.

GROSVENOR CHALLENGE CUP

THE race for the Grosvenor Challenge Cup (presented by Lord Edward Grosvenor) will take place on the last day of the Two-Seater Light Aeroplane Competition, viz., Saturday, October 4, 1924.

The race is open to any aeroplane, the total piston displacement of the power plant of which does not exceed 1,100 c.c.

The distance is approximately 100 miles, and will consist of two laps of the course—Lympne, Manston, Lympne.

Offices: THE ROYAL AERO CLUB,

3, CLIFFORD STREET, LONDON, W.1.

H. E. PERRIN, Secretary

Investitures

At Buckingham Palace on July 10 the following were severally introduced into the presence of His Majesty, when the King invested them with the insignia of the respective Divisions of the Orders into which they have been admitted:—

Order of the British Empire (Military Division).

Officers.

Squadron-Leader Charles Blount, R.A.F.

Flight-Lieut. Gerald Bryer, R.A.F.

Flight-Lieut. Maurice Moore, R.A.F.

Members.

Observer-Officer Patrick Hayes, R.A.F.

Flying-Officer Ernest Whittlesea, R.A.F.

Sergt.-Major (Class I) Richard Gorwood, R.A.F.

LIGHT 'PLANE AND GLIDER NOTES

THE announcement that the light 'plane trials at Lympe have been postponed from September 8-13 to September 29-October 4 will come as a disappointment to many. When we approach the end of September and the beginning of October the weather becomes a somewhat uncertain quantity, and if fair judgment is to be given in these competitions it is essential that the weather should be as favourable as possible. The tests, it will be remembered, are intended to produce low-power light aeroplane two-seaters suitable for school work. The cylinder capacity is limited to 1,100 c.c. The Air Ministry are offering a first prize of £2,000 and a second prize of £1,000, while the Duke of Sutherland has offered a prize of £500 for the best take-off and pull-up. Other private individuals have offered prizes as well, so that the competitions should draw a very full entries list. Speed range, it will be remembered, is the feature aimed at, and no restriction on fuel consumption is imposed, it being presumably taken for granted that the limit on engine capacity is sufficient to ensure good fuel economy. The speed range will be determined from the formula $\frac{V_m - V_s}{V_s} - 0.333$, where

V_m is the maximum speed, and V_s the slow speed. A minimum speed range percentage of 33 is required before any marks are awarded, and for each per cent. above the minimum eight marks will be awarded. Thus, if the maximum speed of a machine is 80 m.p.h. and the slow speed 30 m.p.h. the percentage figure will be $\frac{80 - 30}{30} - 0.333 = 1.334$, or 133.4 per cent., and the number of marks awarded will be 1067.2.

As the high-speed tests are to be flown over a course of 75 miles and the low-speed tests over four short runs, two out and two back, it will be seen that the effect of wind on the results may be very pronounced. Thus, if a machine has a top speed of 75 m.p.h. in still air and there is a wind blowing, parallel to the course to be flown, of only 15 m.p.h., which is not a high wind, by any means, the average speed over the out-and-home course will be reduced to 72 m.p.h. Although this reduction does not appear to amount to a great deal, it will be found to have a most detrimental effect on the number of marks awarded. If we suppose that the machine with a top speed of 75 m.p.h. in still air has a slow speed of 35 m.p.h., the speed range is 40 m.p.h., and the number of marks awarded would be $\left(\frac{40}{35} - 0.333\right) \times 8 = 647.2$. With the top speed reduced to 72 m.p.h. the "figure of merit" would become $\frac{37}{35} - 0.333$, and the number of marks would only be 579.2. During the low-speed test a strong wind would, of course, tend to improve matters, giving a lower figure than would be obtained in still air. In either case it is highly desirable that the tests should be flown in a calm, but absence of wind at that time of the year usually means fog, which is nearly as bad.

THE reason given for the postponement of the competitions is that, owing to the demands of the Air Ministry in the way of engine alterations to conform to Air Ministry ideas, there has been considerable delay in getting engines ready, and consequently aircraft manufacturers have been hung up. Naturally it is important to have at least a month in which to test out a new type before putting it into a competition, and in most cases designers were doubtful as to whether this would be possible. There seems thus to have been fairly general agreement that postponement of the trials for a fortnight was desirable, and the Royal Aero Club agreed to defer the meeting until September 29. The Grosvenor Cup race will, presumably, be flown on the last day of the Lympe meeting, i.e., October 4.

WITH reference to our Editorial Comments in last week's issue of FLIGHT headed "Light 'Plane or?" we have received from Capt. Geoffrey de Havilland the following letter:—

"I note in today's FLIGHT you refer to a conversation in which I expressed certain views of the light aeroplane.

"I had no idea at the time that these remarks would be published, and in view of the fact that they may appear disparaging to the light aeroplane, I should like to make the position clear.

"The design and construction of new machines is a very costly business, and it was not considered policy to embark

on the design of a new-type machine, rather highly experimental, when there was little production work going through the shops and when the type in question was of doubtful value with the specified engine power, as a future production type.

"One has great confidence in the light aeroplane becoming a popular and important type with certain definite modifications as regards engine power.

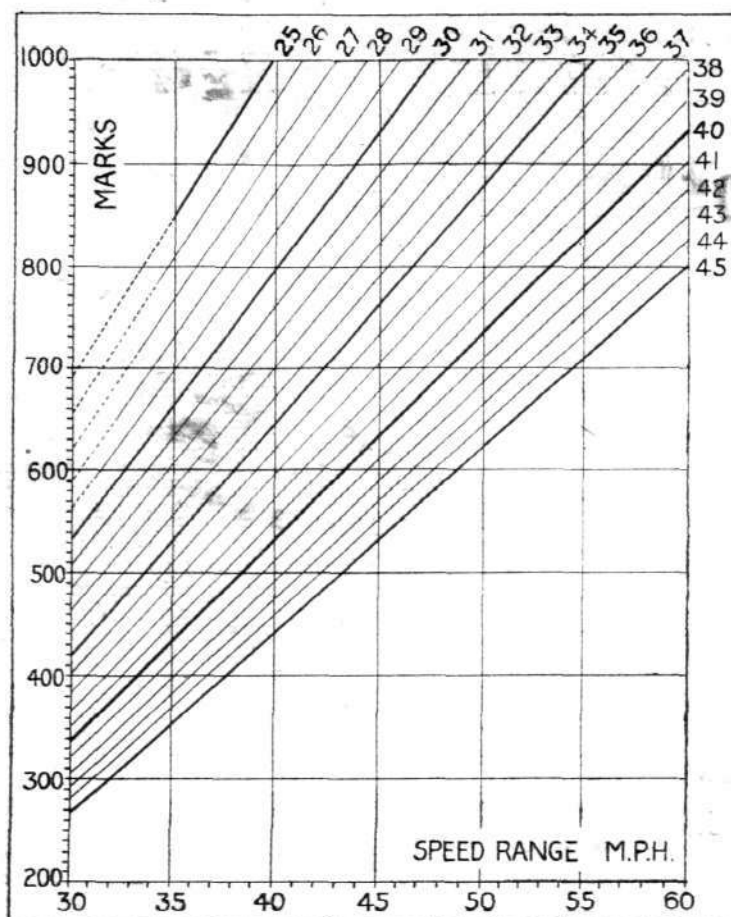
"The forthcoming trials will be invaluable in providing useful information on many interesting points in design.—Yours faithfully, (Signed) G. DE HAVILLAND."

WE are glad to note that Capt. de Havilland has confidence in the future of the light 'plane, provided more engine power is employed, and if we, in our comments last week, conveyed any different impression it was done unintentionally. The only point that really arises in this connection is: When does a light 'plane cease to be a light 'plane? Not so very many years ago a two-seater fitted with 50 h.p. engine was considered a fairly powerful machine, although it certainly did not equal in efficiency the modern light 'plane. It seems to us that when this power is employed we are getting somewhat away from the light 'plane idea and ideal. We are not disputing that a better all-round machine will result, nor that this may ultimately be the type to survive. Hence we headed our comments "Light 'Plane or?"

WHILE on the subject of entering machines for the Lympe competitions we should like to quote from a letter which we have received from the managing director of another well-known British aircraft firm. Our correspondent does not wish his identity to be disclosed, but his views are interesting. "As I see it," the letter runs, "there will be about 10 competitors and perhaps 15 machines. It will cost about £1,000 to go in for the competition, the first prize is only £2,000, and therefore I do not think it is worth it. I cannot see any possibility of building these machines to A.I.D. requirements under £700 or £800, which I consider much too expensive a price for anybody to buy at now."

HERE we have yet another view, which tallies with that of Capt. de Havilland in regard to the cost of entering a machine, but which does not object to the small engine power allowed. On the other hand, the added objection is raised that machines of this type will cost too much to build to A.I.D. requirements. If an even larger engine were fitted presumably the cost would be still further increased, and it seems as if the only way to popularise flying will be to give constructors an absolutely free hand. By the time the Air Ministry had finished "faking up" the Blackburne engine this excellent little power plant had increased in price from £35 to £85 approximately. Yet last year at Lympe Bert Hinkler in the Avro monoplane flew 1,000 miles in one week without a single forced landing. This, be it noted, was before the Air Ministry "experts" had started meddling with the engine. If Air Ministry interference has doubled the price of the engine, it will doubtless have added also very considerably to the price of a machine, and in this connection it is interesting to read an announcement in our French contemporary, *Les Ailes*, of July 10, 1924, to the effect that the de Havilland Company has been obliged to raise the price of the D.H.53 to £550. We are under the impression that last year's D.H.53 with the "unfaked" Blackburne and the original machine, was about £350. It looks uncommonly like paying a couple of hundred for the (compulsory) "privilege" of having the Air Ministry's blessing.

As already pointed out, the competitions at Lympe in September place a premium on speed range, this being the great feature aimed at. In order more easily to form a picture of the manner in which the rules will operate, we have prepared the chart given on p. 454 which shows at a glance the number of marks awarded for any particular performance. Curves of slow speed, ranging from 25 m.p.h. to 45 m.p.h., have been plotted on a base of speed range in miles per hour, and the number of marks can be read off on the vertical scale. It will be remembered that the top speed of a machine, to make it eligible for the competitions, must be not less than 60 m.p.h., while the slow speed is not to exceed 45 m.p.h. We have previously pointed out that the rules appear to aim at a medium-speed machine, using the expression as applying to



Speed-range and the award of marks in the Lympne light plane competitions. This graph shows at a glance the number of marks that will be awarded for speed range. The figures on the curves relate to the slow speed, so that when this and the top speed are known the number of marks awarded can be read off directly. The dotted portion of the upper curves refers to a speed range so low as to fail to bring the top speed up to the minimum of 60 m.p.h. stipulated.

low-power machines, but that if anything the rules tend to encourage the slower types. The chart brings out this point in a very striking matter.

LET us take as a reasonable average a machine having a slow speed of 35 m.p.h. and a top speed of 75 m.p.h. The speed range would then be 40 m.p.h., and such a machine would be awarded 647 marks. Another machine with the same speed range, but with a top speed of 67 m.p.h. and a slow speed of 27 m.p.h., would be awarded 917 marks. On the other hand, a machine with top speed and slow speed of 80 m.p.h. and 40 m.p.h. respectively would only obtain 533 marks. It must be admitted, however, that the very low landing speeds would probably be difficult to attain without making the machine rather large and cumbersome, while very high top speeds would be necessary in order to score high marks with a machine of high landing speed.

Thus if the landing speed of 45 m.p.h. allowed as the maximum were chosen, the speed range would have to be 60 m.p.h. (i.e., a top speed of 105 m.p.h.) in order to score 800 marks. At the other end of the scale, if the top speed were kept at the minimum of 60 m.p.h. stipulated, the landing speed would have to be 26 m.p.h. in order to obtain 780 marks.

FROM the formula used it will be obvious that the cumulative effect of but small changes in the speed range will be vastly important in the award of marks, and competitors will doubtless use every artifice known in order to increase speed range to the maximum. This at once brings forward the question of wing-flap gear, slotted wings, etc., and it will be of interest to examine briefly the advantages that may be expected to be derived from the use of such aids to speed range. These devices have been somewhat slow in being taken up, especially the slotted wing, in ordinary machines, although the Fairey flap gear has been in regular use for many years with excellent results, and the de Havilland automatic flaps, although of recent date, have also given excellent results. In ordinary

machines, however, the need for speed range is scarcely as urgent as it will be in the Lympne competitions. A reduction in landing speed of, for instance, 5 m.p.h. is not a very vital matter in ordinary flying, but let us see what difference it will make to a light plane in the competitions.

TAKING again our "medium" machine with speed range 35-75 m.p.h. which receives 647 marks. If, by fitting slotted wings, flap gear or some similar device, the landing speed could be reduced from 35 m.p.h. to 30 m.p.h. without lowering the top speed, the marks awarded would be 933, an enormous gain. It would thus appear that firms who have devices of this kind should be very hard to beat. Curiously enough, neither of the three firms who have had experience with flaps or slotted wings is, we believe, entering machines. Perhaps, however, they will be willing, in order to demonstrate the usefulness of their devices, to let other competitors use them for the purpose of the Lympne competitions only. The three firms are, of course, the Fairey Aviation Company, who have patented and used for years the Fairey camber gear, which is operated by the pilot; the de Havilland Aircraft Company, who have recently developed an automatic flap gear; and Handley Page, Ltd., patentees of the slotted wing.

It is almost impossible to forecast with any degree of certainty the number of marks likely to be gained by the winning machine. We have, however, been permitted to see the performance figures for one machine. These, it should be pointed out, are estimated figures only, but there seems reason to believe that the actual performance figures will not differ widely from the estimated. The top speed is estimated to be 84 m.p.h. and the slow speed 34 m.p.h., so that the speed range is 50 m.p.h. and the number of marks that will be gained, if these performances are realised in practice, is 910. This is, of course, extraordinarily good for a fixed-wing machine, and it may be doubted that this figure will be greatly exceeded by any competitor. If the machine in question had its landing speed reduced by two m.p.h. only, by means of flaps or slotted wings, the figure would become roughly 1,030 marks.

In connection with our chart we would point out that the accuracy obtainable is not, of course, such as would be sufficient for purposes of judging machines, where fractions of one mark will come into consideration. The chart is merely intended as a rough-and-ready guide to the sort of awards that will be given for any particular performance.

THE final entries list for the forthcoming *Tour de France des Avionnettes* has now been published, and shows a total of 15 machines entered. These are: 1 and 2, Vliegtuig-Industrie "Holland" (Holland); 3 and 4, Dewoitine (France); 5 and 6, Farman (France); 7 and 8, Milos Bondy i Spol (Czechoslovakia); 9, Blériot Aéronautique (France); 10, Victor Simonet (Belgium); 11, Demonty (Belgium); 12, Georges Ligreau (France); 13, Pierre Carmier (France); 14, Dewoitine (France); 15, Beaujard-Viratelle (France).

THE two Dutch machines entered are built by the Carlier firm, whose machine was flown from Holland to Paris some months ago. They will, we understand, both be fitted with Anzani engines. The three Dewoitines will be fitted with Vaslin engines of 1,100 c.c., 1,300 c.c. and 2,000 c.c. respectively. It is not yet known which engines the Farman designers have chosen, but the "Avia" machines will be fitted one with a Vaslin and the other with a British Blackburne. The machine entered by Blériot is the A.N.E.C. monoplane flown by James last year, and is fitted with a Blackburne engine. In view of the small size of this engine, it will be a feather in the cap of the A.N.E.C. firm if this machine should win, as a much larger engine capacity is permitted and the race is a speed event. It is understood that if possible M. Simonet's machine will have a Bristol "Cherub," but failing that he will use his Sergeant of last year. The Demonty-Poncelet is driven by an old water-cooled Gregoire engine of the pre-War period, rated at 40 h.p., while the Ligreau machine will have a small two-stroke engine designed and built by the builder of the machine. The Beaujard-Viratelle will have a Sergeant. It thus seems probable that the British light plane engine industry will be represented both by Blackburnes and Bristols. It is a pity that no British light plane, apart from the A.N.E.C., will take part.

WE learn that already one of the A.B.C. "Scorpion" engines has been sold for use in a light plane. It is somewhat curious that the first engine to be sold for this purpose has been ordered by a German firm, the Caspar Werke.

PROGRESS IN THE BIG FLIGHTS

Round-the-World Flights

THE outstanding feature of the round-the-world flights during the past week has been the splendid progress made by the American team, consisting of Lieuts. Smith, Wade and Nelson. They have, since we left them last week at Chahbar, covered nearly 4,000 miles, and on Wednesday afternoon they arrived at Croydon from Paris *en route* for Hull. On the other hand, Sqdn.-Ldr. MacLaren and his companions, on their Vickers "Vulture" amphibian (Napier "Lion"), have not made such rapid progress, four days having elapsed before they left Tokyo—during which time, however, they met with a most enthusiastic reception from the Japanese, and had to attend several important functions. The day following his arrival at Tokyo Sqdn.-Ldr. MacLaren sent the following telegram to Shell-Mex, Ltd.:-

"At this stage, and after 11,000 miles' flight, I wish to express appreciation of your organisation, which has provided Shell spirit wherever required. The quality of the oil and spirit has been super-excellent throughout, and I could not wish for better results. I further wish to thank you for arranging dumps of Shell oil and spirit across the Pacific, as I realise that Shell has done all that is possible to ensure my success in flying over the seas."

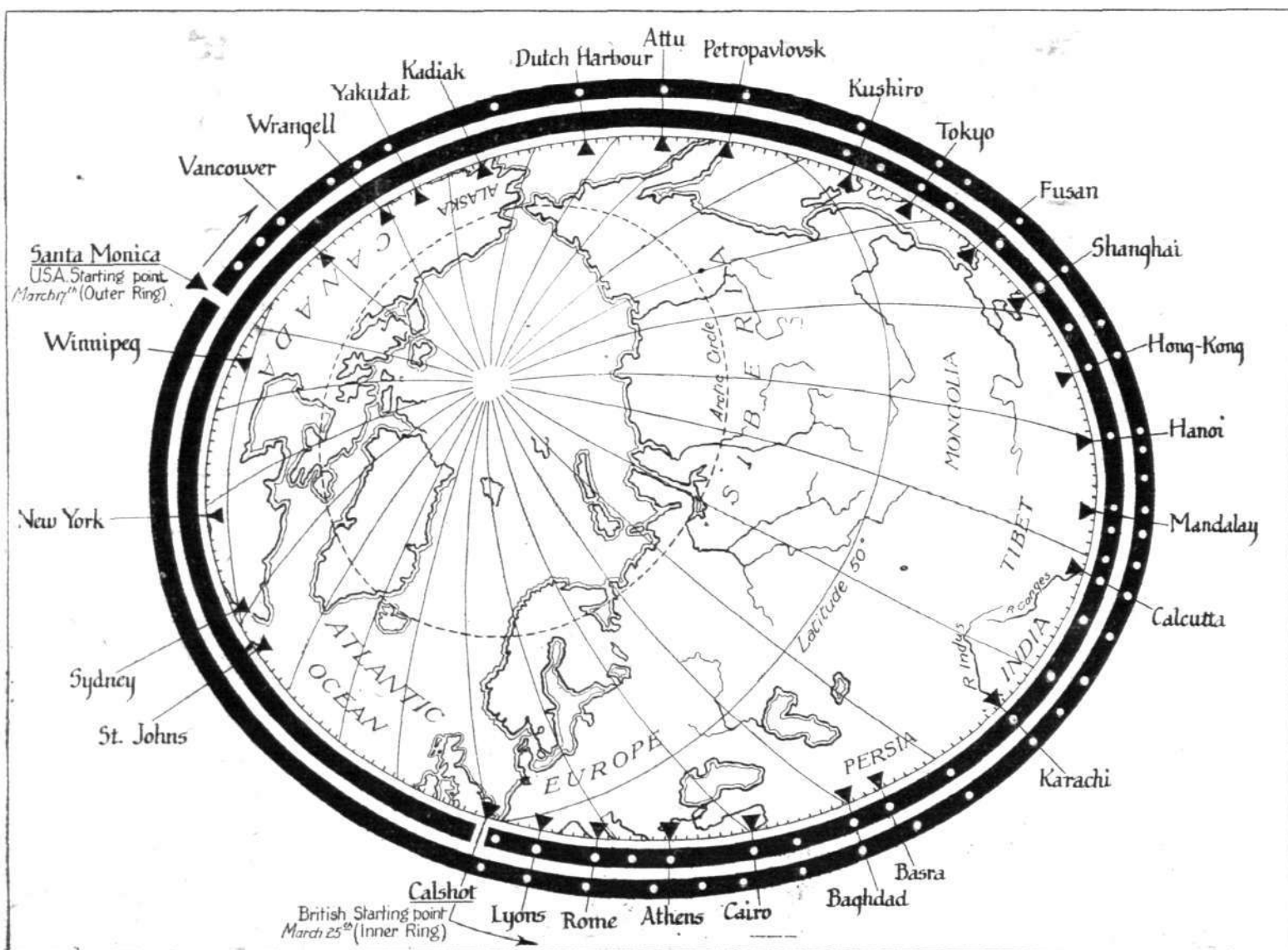
On July 9 they were entertained at a luncheon given by the Minister of Communications, at which a large gathering of important personages were present. They were also entertained at the Imperial University and at the Maple Club.

Sqdn.-Ldr. MacLaren stated that he was very much impressed by the warmth of the welcome they had received in Japan, and with the splendid organisation there.

However, on Saturday, July 12, a start was made from the Kasumigaura air station, Tokyo, with the object of reaching Minato, a distance of about 370 miles. Unfortunately, the radiator developed a leak, and they were compelled to return to set matters aright. It was not until 6 a.m. the following morning (July 13) that they were able to proceed. After a journey lasting 12 hours, during which they had to make two descents on account of fog, they eventually reached Minato.

On July 14 they started on the difficult section of the route across the Pacific, *via* the Kurile and Aleutian Islands. The first stop after leaving Minato was made at Kushiro, on Hokkaido Island, North Japan, and early in the afternoon they arrived at Yutorofu Island, where, it is reported, they landed on Lake Kashimoye, having covered about 560 miles. At the time of writing this is the latest news to hand, and up to this point the total distance flown is about 11,700 miles.

Turning now to the American flight. On July 8 they left Chahbar, on the Arabian Sea, and proceeded to Bushire. After a short stay here they went on to Baghdad, where they arrived at 5 p.m. They left Baghdad the following morning and arrived later at Aleppo. Here a slight change in the



ROUND-THE-WORLD FLIGHTS: This sketch map has been prepared to show at a glance the position of the British and American crews as known up to Tuesday evening. It is proposed to publish this map from time to time, and to mark on the two dark rings by white spots the approximate position reached by the American and British aviators. The direction followed by the Americans is clockwise (i.e., east to west), and that of the Vickers "Vulture" anti-clockwise (west to east). The Americans left Santa Monica, California, on March 17; the British crew left Calshot (Southampton Water) on March 25. Reports on Tuesday stated that the British were at Yutorofu Island. The Americans reached Croydon on Wednesday afternoon.



THE ROUND AUSTRALIA FLIGHT: The two officers of the Royal Australian Air Force, Wing-Commander Goble (right) and Flight-Lieut. Ivor E. McIntyre (left), who recently accomplished the magnificent 8,500 mile flight round Australia on a Fairey III D seaplane (Rolls-Royce engine). In recognition of their effort H.M. The King has made each a Commander of the British Empire, while the Australian Government has made a grant of £500 to Wing-Comdr. Goble and £250 to Flight-Lieut. McIntyre.

route was decided upon, and Constantinople was fixed as the next stop—not Konia and thence to Belgrade, as previously planned. Before leaving Aleppo on July 10, therefore a telegram was dispatched to Constantinople, notifying the powers that be of their proposed arrival. After a rough passage over the Taurus they arrived at Constantinople—two hours before the arrival of their telegram from Aleppo!

It was originally intended to continue the journey on Friday, July 11, but the Turkish authorities insisted upon their staying in Constantinople during Friday in order that they, the Turks, might have an opportunity of making a thorough examination of the Douglas world-cruisers—and a number of Turkish aviators and military officers did so. However, the American flyers managed to get away from Constantinople on Saturday, July 12, and arrived at midday at Bucarest. They left Bucarest at 5 a.m. the next morning for Vienna, encountering bad weather *en route*, which compelled them to land at Pancsova in Southern Hungary. Eventually they arrived in Vienna, and at 4.40 a.m. on July 14 they left again for Strasbourg, a distance of 400 miles, which was reached about noon. After a short stay here, they resumed their journey to Paris, accompanied by an escort of machines from the 2nd Flying Squadron stationed at Neustadt.

In the meanwhile about thirty machines from the 34th Flying Squadron left Le Bourget in order to meet the Americans and lead them into Paris. Large crowds gathered at Le Bourget to see the arrival of the American flyers, and arrangements were made to give them an official and enthusiastic welcome.

Just about 4 o'clock, the three Douglas cruisers, surrounded by their escort of French machines, came into view, and a number of other machines immediately ascended from Le Bourget aerodrome to give them an aerial greeting. They passed over the aerodrome at about 6,000 ft. and flew in the direction of Paris, where they circled over the Arc de Triomphe and the Tomb of the French Unknown Warrior. After this, they returned to Le Bourget, where, making a wide circuit of the aerodrome, they parted company with their French escort—which flew back to its base—and then made a splendid landing to the accompaniment of loud cheers from the spectators. They taxied their machines up to the main buildings, and after climbing out were escorted by many French and American officials to the reception room, where the success of the expedition was toasted in champagne.

During the following day the American world flyers were officially "entertained" in Paris, and they also took the opportunity of placing a wreath on the Tomb of the French Unknown Warrior. Shortly after 11 a.m. on Wednesday they left Le Bourget for Croydon, *en route* for Hull. They arrived at Croydon, escorted by two British 'planes, at about 2 p.m., and received a remarkably enthusiastic reception from the large crowd assembled at the aerodrome. We will report their arrival in detail in our next issue of FLIGHT.

NOTICES TO AIRMEN

Croydon Aerodrome: Obstructions

1. A FENCE has been erected across the south-west corner of the Croydon aerodrome, in the area unfit for landing and upon which sheep are allowed to graze. This fence runs south from the meteorological building, and is marked with black-and-white obstruction flags.

2. *Previous Notice.*—The plan published with Notice to Airmen No. 25 of 1924 should be amended accordingly. (No. 53 of 1924.)

Conditions under which Aircraft are Required to Carry Wireless Apparatus and a Licensed Wireless Operator, and Conditions as to the Use of Wireless Apparatus.

1. WITH reference to Section V, para. 41, of the Air Navigation Directions 1922 (A.N.D. 3) (as amended by the Air Navigation Directions, 1924: A.N.D. 3C), which prescribes the instruments to be carried by British aircraft registered in Great Britain and Northern Ireland, it has been decided that:—

(a) All aircraft capable of carrying 10 or more persons, including the crew, shall be equipped with wireless apparatus.

(b) All aircraft equipped with wireless apparatus shall, when used for public transport and when flying 100 miles, or 15 miles over sea, carry a licensed operator and maintain a continuous wireless service during flight. In the case of

aircraft capable of carrying 10 or more passengers, the licensed operator shall not be the pilot.

It is intended shortly to take steps to give legal effect to the foregoing decisions, and in the meanwhile it is considered advisable that all owners of aircraft should act in accordance therewith without delay.

2. It is intended at a later date in accordance with international agreement, further to amend the conditions under which aircraft are required to carry wireless apparatus and a licensed wireless operator.

Aircraft used in public transport and when flying 100 miles, or 15 miles over sea will, as regards the carriage and employment of wireless apparatus, be divided into two categories:—

(A) Those capable of carrying less than 10 persons including the crew.

(B) Those capable of carrying 10 or more persons including the crew.

Aircraft belonging to category A will be required to be fitted with wireless apparatus (telegraph or telephone), and a licensed operator, who may be the pilot, shall be carried.

Aircraft belonging to category B will be required to use only telegraphy for normal communications, a licensed operator shall be carried, and it will be compulsory for the radio-telegraphy apparatus to be worked by a licensed operator other than the pilot. The use of radio-telephony will be confined to cases of emergency.

(No. 61 of 1924.)

THE ROYAL AIR FORCE

London Gazette, July 8, 1924

General Duties Branch

The follg. are granted short service commns. as Pilot Officers on probation, with effect from, and with seniority of, the dates indicated:—C. Clarkson, C. R. Cubitt, R. N. T. Gape, H. C. V. Jolleff, R. C. L. Limbert, W. L. McLaren, A. L. Ottway, P. E. G. Sayer, J. H. Sender, J. T. C. Skellon, C. W. M. Smith, C. V. Williams, W. Woollett; June 30.

Flying Offr. C. W. Dann, M.C., is granted hon. rank of Flight Lieut.; June 10. Flying Offr. H. A. Anson is secd. whilst employed on quasi-military duty as A.D.C. to the High Commissioner for Iraq; July 1. The follg. Pilot Offrs. on probation are confirmed in rank; June 16:—A. E. Paish, R. E. Slacke, H. C. M. Shaw, J. A. P. A. Yearsley. Group Capt. the Hon. J. D. Boyle, C.B.E., D.S.O., is placed on half-pay, Scale A; June 7. The short service commn. of Pilot Offr. on probation L. V. H. G. Clarke is terminated on cessation of duty; June 25.

Stores Branch

Capt. and Asst. Paymr. G. H. White, R.A.P.C., is granted temp. commn.

as Flight Lieut. for accountant duties with seny. of April 1, 1918, on seconding for three years' duty with R.A.F., and to be acting Sqdn. Ldr.; July 1.

Medical Branch

H. W. Corner, M.B., is granted a short service commn. as Flying Offr., with effect from, and with seny. of, June 24. Flight Lieut. T. A. G. Hudson, B.A., is transferred to Reserve, Class D.2; July 4. Flying Offr. K. R. Smith, M.D., D.P.H., relinquishes his tempy. commn. on ceasing to be employed; June 25.

Reserve of Air Force Officers

The follg. Flying Offrs. are confirmed in rank, with effect from dates indicated:—B. A. Trechmann; May 17. H. A. Mason; May 18. K. E. Shelley; June 15. F. L. Barnard, A.F.C., R. C. Presland; June 28. Pilot Offr. J. Simpson is transferred from Class A to Class C; Jan. 30.

Memorandum

The permission granted to Sec. Lieut. C. Watkins to retain rank is withdrawn on his enlistment in the Army; May 26.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch.

Group Captain.—P. F. M. Fellowes, D.S.O., to R.A.F. Depot pending disposal on transfer to Home Estab.; 16.6.24.

Group Captain R. Gordon, C.B., C.M.G., D.S.O., to No. 1 Group H.Q., Kidbrooke, to command, 21.7.24.

Wing Commander.—A. C. Winter, O.B.E., to Air Ministry for Air Staff duties; 28.7.24.

Squadron Leaders.—P. Babington, M.C., A.F.C., to No. 19 Sqdn., Duxford; 28.7.24. W. H. Dolphin to R.A.F. Depot, on transfer to Home Estab.; 16.6.24.

Squadron Leader.—A. A. Walser, M.C., D.F.C., to No. 28 Sqdn., India, instead of to No. 31 Sqdn. as previously notified.

Squadron Leader.—H. S. Powell, M.C., to No. 31 Sqdn., India, 20.6.24.

Flight Lieutenants.—R. S. Lucy, A.F.C., to Superintendent of Reserve, Northolt; 15.7.24. L. A. K. Butt to R.A.F. Depot; 1.7.24. J. L. Vachell, M.C., to School of Army Co-operation, No. 16 Sqdn., Old Sarum; 23.6.24. G. E. Godsave to R.A.F. Depot; 15.6.24. J. R. I. Scambler, A.F.C., to No. 13 Sqdn., Andover; 10.6.24. J. S. T. Fall, D.S.O., A.F.C., to Aircraft Depot, Egypt; 19.6.24. A. MacGregor, D.F.C., to H.Q., Iraq; 12.6.24.

Flight Lieutenants.—H. L. Nunn, D.S.C., D.F.C., to C. and M. Party, Isle of Grain; 16.6.24. R. S. Capon, to Aeroplane and Armament Experimental Estab., Martlesham Heath; 1.7.24. F. H. E. Reeve, to H.Q., Egypt; 16.6.24.

Flight Lieutenants.—R. V. Goddard, to No. 2 Flying Training Sch., Digby, 15.7.24. E. L. Barrington, M.C., D.F.C., to No. 2 Flying Training Sch., Digby, 16.7.24. H. W. L. Saunders, M.C., D.F.C., M.M., to Air Ministry, 15.7.24. A. L. Chick, A.F.C., to Air Ministry, 19.7.24. F. Leathley, M.C., to Aircraft Depot, Egypt, 21.6.24. A. L. Paxton, D.F.C., to Egyptian Group H.Q., 21.6.24.

Flying Officers.—J. Bowen to R.A.F. Depot on transfer to Home Estab.; 29.5.24. J. V. Reeve to Engine Repair Depot, Egypt; 19.6.24. J. H. Tanner to No. 13 Sqdn., Andover; 26.6.24. R. H. Wathes to R.A.F. Depot on transfer to Home Estab.; 16.6.24.

Flying Officers.—S. T. B. Cripps, D.F.C., to No. 19 Sqdn., Duxford; 20.6.24. R. F. Casey, D.F.C., to R.A.F. Depot on transfer to Home Estab.; 31.5.24. S. J. Mason, to No. 19 Sqdn., Duxford; 18.6.24.

Flying Officers.—C. C. Abraham, to R.A.F. Base, Leuchars, 21.7.24. A. E. Gliddon, D.S.M., to Boys' Wing, Cranwell, 1.8.24. E. H. Elliott, to Inland Area Communication Flight, Northolt, 15.7.24. F. H. Shales and J. W. F. Merer, to Experimental Section, R.A.F., S. Farnborough, 1.8.24. A. Leach, M.C., R. N. Hesketh, W. J. M. Akerman and C. B. Wilson, to No. 22 Sqdn., Martlesham Heath, 1.8.24. G. A. R. Muschamp, to Boys' Wing, Cranwell, 17.7.24. W. E. Dipple, to Marine Aircraft Experimental Estab.,

Felixstowe, 1.8.24. A. K. Bamber, to No. 15th Sqdn., Martlesham Heath 1.8.24. E. A. Healy, to No. 28 Sqdn., India, 11.6.24. The following to R.A.F. Depot on appointment to short service commns., 8.7.24:—P. J. Bett, N. T. Goodwin, D. H. MacDonald-Lawson, and P. J. Phelan.

Pilot Officers.—The following are posted on appointment to Short Service Commns., 30.6.24: C. Clarkson, J. T. C. Skelton, and C. V. Williams, to No. 58 Sqdn., Worthy Down; C. R. Cubitt, R. N. T. Gape, H. C. V. Jolleff, R. C. L. Limpert, and A. L. Ottway, to No. 19 Sqdn., Duxford; R. H. Holmes, I. W. C. Mackenzie, and W. F. Parkinson, to No. 3 Sqdn., Upavon; W. L. McLaren, P. E. G. Sayer, J. H. Sender, C. W. M. Smith, and W. Woollett, to No. 29 Sqdn., Duxford.

The following to R.A.F. Depot on appointment to short service commns., 8.7.24:—H. B. Barrett, S. F. Bell, A. E. Carpenter, D. P. Clayton, W. A. Cooke, J. E. Davies, B. B. Dowling, L. A. Eggesfield, A. C. Evans-Evans, H. R. Gillespie, W. E. Gray, R. C. B. Hendy, J. H. Hunter, M. H. Jenks, N. S. Little, D. J. Lloyd, C. W. Martin, H. Miller, C. H. Morgan, R. W. Steele, W. E. Symonds, A. J. Thompson, C. W. L. Trusk, H. Walker, and D. G. Wilson.

Stores Branch.

Flight Lieutenant (Accountant).—R. F. C. Metcalfe to No. 4 Flying Training Schl., Egypt; 6.5.24.

Flying Officer C. E. Tidy to No. 2 Sqdn., Manston, 14.7.24.

Pilot Officer B. J. L. Gordon-Inghis (Accountant) to No. 1 Schl. of Tech. Training (Boys), Halton, on appointment to a Short Service Commn., 25.6.24.

Medical Branch.

Squadron Leaders.—D. A. Power, M.C., to Central Medical Board, Hampstead; 12.7.24. B. F. Beatson, D.T.M., to No. 1 Schl. of Tech. Training (Boys), Halton; 10.7.24.

Squadron Leader.—H. B. Porteous, M.B., to No. 7 Group H.Q., Andover; 7.7.24.

Flight Lieutenant (Q.Mstr.).—J. M. Maxwell to R.A.F. Hospital, Cranwell; 8.7.24.

Flying Officers.—A. Dickson, M.B., to No. 4 Sqdn., S. Farnborough. 28.6.24.

Flight Lieutenants.—T. R. S. Thompson, M.B., to R.A.F. Depot, on transfer to Home Estab.; 4.6.24. C. A. E. I. Brownlee, M.B., to R.A.F. Base, Leuchars; 9.7.24. A. W. Comber, to Marine Aircraft Experimental Estab., Felixstowe; 1.7.24.

Flying Officers.—A. Dickson, M.B., and A. A. Townsend, M.B., to R.A.F. Depot; 25.6.24. H. W. Corner, M.B., to Research Lab. and Medical Officers' Sch. of Instruction, Hampstead, on appointment to a Short Service Commn. for short course; 24.6.24.

Flying Officers A. A. Townsend, M.B., to No. 111 Sqdn., Duxford, 7.7.24. S. G. Gilmore, to R.A.F. Depot, 14.7.24.

IN PARLIAMENT

R.N. Air Service Officers

SIR T. BRAMSDON on July 9 asked the Parliamentary Secretary to the Admiralty the number of naval officers who have volunteered for service in the naval air arm in accordance with Admiralty Fleet Order 1058/24; the number who have been rejected for medical and other reasons; and if difficulty is being experienced to obtain suitable candidates because of the conditions of service?

Mr. Ammon: The number who have volunteered for service is 86, of whom 19 have been rejected, all for medical defects which, while not rendering the officers unfit for general naval service, debar them from being accepted under the scheme. The full number of officers required for the first course, which commenced on June 16, has been obtained, but it is yet too early to say whether the total number of volunteers required for the later courses, the first of which commences probably in January, will be forthcoming.

Civil Air Traffic and Germany

VISCOUNT CURZON on July 10 asked the Under-Secretary of State for Air whether he is in a position to make any statement as to the stoppage or threatened stoppage of civil air traffic into Germany by the German Government; what are the grounds for this; and what is the attitude of the British Government upon this question?

Mr. Leach: The German Government recently represented that they would not be prepared to renew, after June 30, their permission for the flight over German territory of aircraft of Imperial Airways, Ltd., which were not "civil" aircraft within the meaning of the Regulations (known as the "Nine Rules") imposed on Germany by the Allied Powers to differentiate between "civil" and "military" aircraft. As the outcome of conversations on the question, however, the German Government have now agreed to renew for a further period of three months from June 30 the facilities which they had previously accorded for the operation of British air services over German territory.

Viscount Curzon: Are we to understand that at the end of three months they will again prohibit flying over Germany?

Mr. Leach: The matter will certainly come up again before the expiry of the three months. What will happen then it is not possible to prophesy.

Lieut.-Comdr. Kenworthy: Is not the trouble that, under the Treaty, we are imposing Regulations on Germany which prevent the development of her civil aviation. Would it not be better to get that modified so that our air companies could operate without fear of stoppage all the time?

Mr. Leach: That is exactly what we are trying to do.

Sir H. Brittain: Do these facilities commence at once?

Mr. Leach: It is actually in operation now.

Bombing Aeroplanes

MR. THURTELL asked what number of bombing aeroplanes it is proposed to maintain at the Worthy Down aerodrome; what is the bomb-carrying capacity of these aeroplanes; and are these bombing aeroplanes intended for offensive or defensive action?

Mr. Leach: The answer to the first part of the question is that the number and type of machines to be maintained at Worthy Down are not yet decided. The second and third parts of the question therefore do not arise, but it can be assumed that the functions of any squadrons maintained at that aerodrome will be determined entirely by the necessities of the air defence of this country.

Major the Marquess of Titchfield: Is the hon. gentleman aware of Napoleon's maxim that the best defence is offence?

Poison Gas

MR. THURTELL asked whether the Royal Air Force has in stock aerial bombs filled, or intended to be filled, with poison gas?

Major Colfox: May I ask you, sir, whether it is in the public interest to publish to the world at large the details of our armaments?

Mr. Speaker: That is a matter entirely for the Minister and not for me.

Mr. Leach: The Royal Air Force has no stock of aerial bombs filled, or intended to be filled, with poison gas.

SOCIETY OF MODEL AERONAUTICAL ENGINEERS

AN interesting competition for the "Pilcher Cup" was held on Wimbledon Common on July 12, where some fine flying was witnessed. A rather high wind prevented the competition from taking place until the evening, nevertheless the spectators who waited to see it were well rewarded, for a better exhibition of the flying qualities of fuselage models would scarcely be wished for.

Punctually at 7 o'clock Mr. Gray "got away" with a good high flight, to be followed by Mr. Hersom and the other competitors. After the first round Mr. Hersom headed the list with a spectacular flight of 31.8 secs., which lead he maintained throughout the remaining two rounds, his best flight being 35.4 secs.

The result was as follows:—(1st) S. C. Hersom, 35.4 secs.; (2nd) L. A. Gray, 28.6 secs.; (3rd) F. de P. Green, 22 secs.

The cup was then presented to the winner by Mr. W. E. Evans.

Competitions for the FLIGHT Challenge Cup, Gamage Challenge Cup, and the Model Engineer No. 2 Challenge Cup, will be held on Wanstead Flats on Sunday next, July 20, first competition starting at 11 a.m.

B. K. JOHNSON, Technical Secretary.

Berlin-Angora Air Mail Experiment

AN interesting experimental flight was carried out on July 5-6, when aerial communication was established between Berlin and Angora. Except for the section between Berlin and Dessau (on the Elbe) the whole flight was carried out on a Junkers seaplane (Junkers engine). The route taken followed the Elbe into Czecho-Slovakia, and then a flight overland was made to the Danube, in Austria. A stop was made at Budapest and the journey continued on to Constantinople, which was reached early on Sunday morning, July 6, the flying time up to here being 15 hours. At Constantinople the floats were replaced by wheels and the flight continued overland to Angora. The pilot was Herr Zimmermann, and the total flying time for the 1,400 miles between Dessau and Angora being 27 hours.

Herring Spotting from the Air

It is reported that the Air Ministry, at the request of the Scottish Fishery Board, has detailed three flying-boats for the purpose of carrying out an experiment of locating herring shoals from the air. The flying boats flew from Felixstowe to Port Edgar (Firth of Forth) on July 8, and proceeded the following day to Invergordon (Firth of Cromarty), where the experiments are being carried out.

A "Light Airship" Club

EFFORTS are being made to form a "Light Airship" (i.e., small sporting dirigibles or "blimps") Club for London. This has been suggested by the fact that the airship shed on Wormwood Scrubbs (erected in 1909-10 for the Clement-Bayard airship) is about to be broken up, and it was hoped that the formation of such a club would not only save the shed, but would be the means of creating a reserve of airship personnel which would be of great value for future airship development. It is understood that the Air Ministry is favourably inclined towards the scheme, and would give practical assistance. There are still many airship enthusiasts in the country, and the practicability and the possibilities of the small airship have already been established, so there is no reason why such a club should not be a success. It might be added that the amount of money required to buy the shed is only a few hundred pounds.

Wright Brothers' Medal

To commemorate the pioneer aeronautical achievements of the Wright Brothers the Dayton Section, Society of Automotive Engineers, will award a medal annually for the most meritorious contribution to aeronautical science reported to them during the year. The contribution to, or discovery in, aeronautical science and art may include advances in aerodynamics, development in construction of aeroplanes, power plants for same, accessories which increase their efficiency or reliability, such as fuel systems, control mechanisms, aerial navigation instruments, etc. Improvements for military application, ordnance, aerial photography, etc., are ineligible competition for this award. The prize will be awarded for contributions designed to stimulate increased non-military use of heavier-than-air craft. Competition for this prize is open to any individual citizen or group of not more than two individual citizens of any country, excepting that S.A.E. National Officers and Dayton Section S.A.E. Officers, contest committee members, and award committee members are ineligible.

The award will be for intrinsic merit of achievement rather than merit of the paper describing it. Flight tests are desir-

able, but will not be absolutely insisted upon, and papers, including complete reports of them, under proper conditions in the presence of unbiased observers is advantageous to the competitor. Papers should be plainly labelled with author's name and address and forwarded to the Wright Brothers' Medal Committee, Dayton Section S.A.E., care of Engineers' Club of Dayton, Dayton, Ohio.

The award for 1924 shall be based on papers received up to December 31, 1924, and shall be announced as soon as all papers and data therein can be checked. The Dayton Section S.A.E. reserves the right to withhold any award if the Award Committee finds no paper submitted of proper standard.

IMPORTS AND EXPORTS, 1923-1924.

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913, see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; for 1921, see "FLIGHT" for January 19, 1922; for 1922 see "FLIGHT" for January 18, 1923; and for 1923, see "FLIGHT" for January 17, 1924.

	Imports.		Exports.		Re-Exports.	
	1923.	1924.	1923.	1924.	1923.	1924.
Jan. . .	466	2,213	60,079	52,239	280	2,219
Feb. . .	641	920	120,236	26,349	3,040	335
Mar. . .	589	11,381	71,945	34,113	689	509
Apr. . .	8,508	373	167,757	56,998	462	6,014
May. . .	845	3,426	55,427	125,138	728	4,162
June . .	1,433	1,219	141,381	87,629	1,410	2,115
	12,482	19,532	616,825	382,466	6,609	15,354

PUBLICATIONS RECEIVED

Germany's Hope for Peace. By E. Price Bell. *Chicago Daily News*, 15, North Wells Street, Chicago, Ill., U.S.A. Price 12 cents.

Italy's Rebirth. By E. Price Bell. *The Chicago Daily News*, 15, North Wells Street, Chicago, Ill., U.S.A. Price 12 cents.

Journal of the American Society of Naval Engineers, May, 1924. American Society of Naval Engineers, Navy Department, Washington, D.C., U.S.A.

AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1923

Published July 17, 1924

- 4,358. SOC. INDUSTRIELLE DES PROCEDES W. A. LOTH. Devices for guiding aircraft. (217,622.)
 18,004. SOC. DES MOTEURS SALMON (SYSTEME CANTON-UNNE). Electric contact breakers for magnetos. (201,542.)
 21,138. LUFTSCHIFFBAU ZEPPELIN GES. Rigid airship frames. (202,657.)
 25,167. J. A. PRESTWICH. Oil-pumps for internal-combustion engines. (217,818.)

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